U.S. DEPARTMENT OF COMMERCE PATENT & TRADEMARK OFFICE

B/O Form PTO-1390 **Transmittal Letter to the United States Designated/Elected Office (DO/EO/US) Concerning a Filing Under *35 USC 371***		*Attorney's Docket Number* JEK/Plaschka
		U.S. Application Number (if known) 09/719559
International Application Number PCT/EP99/04471	*International Filing Date* 28 June 1999	*Priority Date Claimed* 29 June 1998
Title of Invention ANTIFALSIFICATION PAPER		
Applicant(s) for DO/EO/US Reinhard PLASCHKA et al.		

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items under *35 USC 371*:

1. ☒ This is a **FIRST** submission of items concerning a filing under *35 USC 371*.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under *35 USC 371*.
3. ☒ This express request to begin national examination procedures *(35 USC 371(f))* at any time rather than delay examination until the expiration of the applicable time limit set in *35 USC 371(b)* and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed *35 USC 371(c)(2)*.
   a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☒ has been transmitted by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English *(35 USC 371(c)(2))*.
7. ☒ Amendments to the claims of the International Application under PCT Article 19 *(35 USC 371(c)(3))*
   a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☐ have been transmitted by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 *(35 USC 371(c)(3))*.
9. ☒ An oath or declaration of the inventor(s) *(35 USC 371(c)(4))*. (☐ Executed ☒ Unexecuted)
10. ☒ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 *(35 USC 371(c)(5))*.

Items 11 to 16 below concern other document(s) or information included:

11. ☐ An Information Disclosure Statement under *37 CFR 1.97* and *1.98*.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with *37 CFR 3.28* and *3.31* is included.
13. ☒ A **FIRST** preliminary amendment.
    ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information: 2 sheets formal drawings

526 Rec'd PCT/PTO 28 DEC 2000

Application Number (if Known)	International Application Number	Attorney's Docket Number
09/719559	PCT/EP99/04471	JEK/Plaschka

	Calculations	PTO USE ONLY
17. The following fees are submitted: **Basic National Fee *(37 CFR 1.492(a)(1)-(5))*:** ☒ Search report has been prepared by the EPO or JPO . . . . . $860.00 ☐ International Preliminary Examination Fee paid to USPTO *(37 CFR 1.482)* . . . . . $690.00 ☐ No International Preliminary Examination Fee paid to USPTO *(37 CFR 1.482)* but International Search Fee paid to USPTO *(37 CFR 1.445(a)(2))* . . . . . $710.00 ☐ Neither International Preliminary Examination Fee *(37 CFR 1.482)* nor International Search Fee *(37 CFR 1.445(a)(2))* paid to USPTO . . . . . $1000.00 ☐ International Preliminary Examination Fee paid to USPTO *(37 CFR 1.482)* and all claims satisfied provisions of PCT Article 33(1)-(4) $100.00		
ENTER APPROPRIATE BASIC FEE AMOUNT	$ 860.00	
Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date *(37 CFR 1.492(e))*.		

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total Claims	17 -20 =		× $18.00		
Independent Claims	2 -3 =		× $80.00		
Multiple Dependent Claims (if applicable)			+ $270.00		
TOTAL OF ABOVE CALCULATIONS				$ 860.00	
Reduction by ½ for filing by small entity, if applicable. Verified Small Entity Statements must also be filed (Note *37 CFR 1.9, 1.27, 1.28)*					
SUBTOTAL				$ 860.00	
Processing fee of **$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date *(37 CFR 1.492(f))*.					
TOTAL NATIONAL FEE				$ 860.00	
Fee for recording the enclosed assignment *(37 CFR 1.21(h))*. The assignment must be accompanied by an appropriate cover sheet *(37 CFR 3.28, 3.31)*. **$40.00** per property.					
TOTAL FEES ENCLOSED				$ 860.00	
Amount to be: Refunded:					
Charged:					

a. ☒ A check in the amount of **$860.00** to cover the fees is enclosed.

b. ☐ Please charge my **Deposit Account Number 02-0200** in the amount of $ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to **Deposit Account Number 02-0200**. A duplicate copy of this sheet is enclosed.

Note: Where an appropriate time limit under *37 CFR 1.494* or *1.495* has not been met, a petition to revive *(37 CFR 1.137(a) or (b))* must be filed and granted to restore the application to pending status.

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DATE: 28 December 2000

Respectfully submitted,

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

International Patent Application No. PCT/EP99/04471

PCT/DO/EO/US

International Filing Date: 28 June 1999

Applicant: Reinhard PLASCHKA et al.

For: ANTIFALSIFICATION PAPER

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

This paper accompanies documents submitted to establish the U.S. national stage of the above-identified international patent application.

The international patent application was amended under PCT Article 34 and the claims as-amended are annexed to the International Preliminary Examination Report (IPER).

Before calculation of the filing fee and before examination, kindly amend the claims as annexed to the IPER as follows:

IN THE CLAIMS:

Claim 3, line 1; delete "or 2";

Claim 4, line 1; change "at least one of claims 1 to 3" to --claim 1--;

Claim 6, line 1; delete "or 5";

Claim 7, line 1; change "at least one of claims 1 to 6" to --claim 1--;

Claim 8, line 1; change "at least one of claims 1 to 7" to --claim 1--;

Claim 9, line 1; change "at least one of claims 1 to 8" to --claim 1--;

Claim 10, line 1; change "at least one of claims 1 to 9" to --claim 1--;

Claim 11, lines 2 and 3; change "at least one of claims 1 to 10" to --claim 1--;

Claim 13, lines 1 and 2; change "at least one of claims 1 to 10" to --claim 1--;

Claim 15, line 1; delete "or 14";

Claim 16, line 1; change "at least one of claims 13 to 15" to --claim 13--;

REMARKS

All rights are reserved to the original claimed subject matter. The claims have been amended to reduce the filing fees and to correct any improper multiple dependent claims. Examination of the application as amended is respectfully requested.

Respectfully submitted,
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Date: December 28, 2000

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Security paper

This invention relates to a security paper for producing documents of value, such as bank notes, passports, ID cards or the like, which is provided with a coating ensuring longer fitness for circulation, and to a method for producing such a security paper.

Bank notes are usually made of so-called security papers consisting of cotton fibers and having special security features, such as a security thread at least partly worked into the paper, and a watermark. The period of circulation of a bank note depends on the stress it is subjected to. Certain denominations are preferably used in trade and thus have a shorter period of circulation due to the greater impact of environmental influences. The principal cause for the restricted period of circulation of bank notes is deemed to be premature soiling. Since bank note paper is very porous it has a large surface area or high surface roughness. Even if the resulting projections and cavities are in orders of magnitude which cannot be resolved by the human eye, they offer ideal conditions for dirt deposits in comparison with a smooth surface.

AU-PS 488,652 has therefore proposed making bank notes completely from a plastic substrate. However, in this case one must do without customary and proven security elements such as portrait watermarks and window security threads, as well as special properties such as the sound and feel of bank note paper. Also, the steel intaglio printing customary in bank notes, which serves as an additional tactile authenticity mark due to the relief resulting from the inking, merely leads to a flat, hardly perceptible relief on plastic substrates.

The problem of the invention is therefore to produce a security paper which is dirt-repellent and therefore has a long period of circulation and which remains unchanged in its other typical properties, such as printability, sound, color, etc.

The solution to this problem results from the independent claim. Developments are the subject of subclaims.

According to the invention, the security paper is provided at least on one of its surfaces with a coating consisting of a composition containing only a binder and no

fillers. A binder within the meaning of the invention includes all substances which form insoluble films or structures in common solvents. The essential thing is that the binder, unlike customary coating materials, contains no fillers, i.e. pigments such as titanium dioxide, in high concentrations. This composition wets the fibers in the surface area of the paper, forming a complete surface film over the fiber. This minimizes the access of dirt to the fiber.

The composition is applied in a layer thickness so as to form a sufficiently smooth surface and minimize the possibilities of dirt deposit, on the one hand. On the other hand, the layer thickness is so small as not to impair the other properties of the paper, such as its feel and printability. The weight per unit area of the coating is preferably about 1 to 6 g/m², in particular 2 to 3 g/m².

The small coating thicknesses leave the transmission properties of the paper unchanged so that the recognizability of any portrait watermarks in the security paper is not impaired. The coating additionally has the advantage that one can do without the customary sizing of the paper. The kind of security paper is not subject to any conditions either, so that one can use customary security papers made of annual plant fibers, in particular cotton fibers, as well as security papers consisting at least partly of plastic fibers, preferably polyamide fibers.

The binders used are preferably polyamide lacquers, acrylates or binder systems containing a high percentage of acrylates. If the binder system has several polymer components, they can be present as a mixture or as copolymers. But one can fundamentally use other binder systems as well. Chemically or physically crosslinkable compositions have proved particularly useful.

Particularly acrylate systems have a number of advantages over other binder systems, for example ones based on polyurethane. They thus have better printing properties and contain fundamentally less solvent so that their processing involves lower environmental impact. Acrylate coatings are in addition characterized by higher surface hardness so that the dirt-repellent effect is improved. Finally, acrylate systems offer the advantage of being considerably more cost-effective than other binder systems and being readily mixable with other polymers.

The binder composition is knife-coated or printed on the paper after production of the latter. This can be done directly subsequent to papermaking in the paper machine or in a separate operation, for example directly before printing the security paper. If required, the smoothness of the surface can subsequently be increased by corresponding calendering. The inventively coated paper offers an ideal printing surface for high print resolution and very good ink adhesion in case of attempted physical and/or chemical attacks.

Then the inventive security paper is printed and possibly processed further in accordance with the paper of value to be produced. A print or embossing, in particular if produced by intaglio printing, leads to a rough surface again and therefore favors dirt deposits. In order to exclude this as well, it is proposed according to the invention that the print be covered with a further binder layer, e.g. lacquer layer. The lacquer layer is preferably adjusted in its composition to the inventive background layer to permit a good bond of the two layers. The bond might be improved by an additional crosslinking step. This can be done by the action of heat or irradiation (e.g. UV radiation). Since the print can be produced with any printing process, such as by steel intaglio or with a laser printer, it might be necessary to adapt the inventive binder composition to the printing process used in order to ensure not only low soiling but also improved adhesion of the inks to the substrate.

A further advantage of the invention is that one can do without further pretreatment of the inventive security paper when optically variable security elements are to be provided on the paper. Optically variable devices or inks showing a viewing angle dependent interplay of colors due to diffraction or light interference require a smooth background for good visibility of this effect. Security elements of this kind are for example holograms, kinegrams or other diffraction structures, as well as inks containing interference layer or liquid crystal pigments or other special-effect pigments such as glossy metallic-effect pigments.

In special cases, however, it may still be useful to provide a further background layer in the area of said element. Liquid crystal pigments and interference layer pigments consisting only of thin mica plates coated with titanium dioxide are transparent so that the color effect is not influenced by the smoothness *alone but also* by the

color of the background. A black background absorbs light transmitted by the pigments, thereby increasing the brilliance of the colors reflected by the pigments. The same applies to security elements constructed of several thin layers and likewise showing an interplay of colors based on interference effects. For these and similar elements it may therefore be necessary to provide the security paper with a further background layer in the area of the security element to be applied.

Alternatively, it may also be expedient to underlay the security element with a machine detectable ~~mechanically~~ or visually detectable authenticity feature, as known for example from WO 97/35732.

The inventive coating furthermore has an advantageous effect on other security elements. For example, it makes embossed structures more trenchant since the smoother background makes the embossings more prominent. Embossings are also more durable since not only the paper fibers are embossed.

According to a preferred embodiment, the coating composition additionally contains a low concentration of at least one substance with a visually and/or ~~mechanically~~ machine detectable physical property. The substance can have for example magnetic, electroconductive, diffractive, light-polarizing or light-interfering properties and be uniformly distributed all over the total coating or applied in the form of patterns. One thereby preferably, in a first step, prints a certain pattern of a composition containing small amounts in the manner of a doping (< 1 wt%) of at least one substance with at least one visually and/or ~~mechanically~~ machine detectable physical property. Only in a second step does one apply the same composition but not containing the detectable additive to the remaining part of the surface of the paper in register with the first pattern.

Said additives can be for example luminescent substances excitable with UV light and emitting in the visible spectral region. In the case of a machine check, however, one can also use luminescent substances emitting in the invisible spectral region, preferably the IR spectral region. One can likewise use photochromic or thermochromic additives.

Instead of physically detectable substances one can also use chemically reacting additives. For example, one can admix a component of a color reaction system to

the binder composition and apply it to the paper. When one applies the second component of the color reaction system at a later time, a colored area, pattern, writing or the like becomes visible on the security paper. This can serve as an authenticity feature or as a cancellation mark for a check, airplane ticket or the like.

By using a plurality of additives and/or varying the concentration of one or more additives one can very simply produce any kind of coding, for example a bar code, on the security paper. Said coding can for example constitute an independent additional security feature or serve as a reference feature for other data already provided on the security paper. Thus, information visible to the naked eye on the bank note, such as denomination, the name of a person shown in the portrait or the like, can be encrypted and stored on the paper in the form of the inventive coding invisible to the naked eye. In a machine check the coding is read, decrypted and tested for identity with the corresponding information visible to the naked eye.

According to the inventive principle one can of course also produce a plurality of different codings. For example, one applies the binder compositions containing the particular additive to the paper in the form of the desired codings simultaneously or successively. One prints or coats the remaining part of the paper surface with additive-free binder composition, as explained above. Alternatively, the different codings can also be disposed on different surfaces of the security paper. Double-sided coating with the same additive is of course likewise possible.

According to a further embodiment, the inventive coating can also have gaps. Said gaps can have any form, e.g. a striped form. Before or after application of the inventive coating they are provided with a print having certain special-effect inks. Said special-effect inks may be interference layer pigments, liquid crystal pigments or other gloss pigments. Said print can cover the gaps all-over or only partly.

The inventive security paper can for example also be used advantageously for producing ID cards and passports. Since it has increased tear strength and dirt resistance, one might possibly do without the customary lamination with plastic foils. If lamination is nevertheless effected, the inventive coating ensures a firm, inseparable bond between paper and cover layer.

In the following some examples of the inventive composition will be explained.

Example 1

A bank note paper made of 100% cotton with a filler content of 3.0% is used for the coating test. The paper is adjusted to a wet strength of 50% based on the dry strength by using commercial melamine resin (e.g. Madurit MW167).

The following formulation is used as the coating:

Acronal 320D (BASF) - aqueous dispersion of acrylic resin -	400 ml
Softened water	600 ml

The mixture is prepared by stirring and applied to the surface of the paper. For this purpose one uses a rotating pair of rolls whose lower side dips into a dish with the diluted Acronal dispersion. Excess suspension is pressed off through the roll slit. The paper is subsequently dried with a commercial photo drier.

The treatment gives the paper the following properties:

Properties	Before treatment	After treatment
Air permeability	25 ml/min	5 ml/min
Water absorption 60 sec	50 g/m²	20 g/m²
Oil absorption GFL	30 sec	150 sec

Example 2

A paper is coated in the same way as stated in Example 1 with the following formulation:

Neocryl-AC 72 (Zeneca) - aqueous dispersion of acrylate -	900 ml
Water	80 ml

Crosslinker CX 100 (Zeneca)	20 ml

Example 3

The paper can also be coated with the following binder composition:

Primal 1-545 (Rohm & Haas) - aqueous dispersion of acrylate -	900 ml
Water	80 ml
Zirconium carbonate (Auer Remy)	20 ml

Example 4

The inventive binder system can also consist of a mixture of several polymers. As an example the following formulation is stated:

Glascol LS 26 (Ciba) - aqueous dispersion of acrylate-styrene copolymer -	700 ml
Polyurethane U 400 N (Alberdink Boley)	200 ml
Water	100 ml

Further advantages and embodiments will be explained in more detail with reference to the figures. It is pointed out that the figures show the layer structure of the inventive security paper only schematically.

Fig. 1 shows an inventive security paper from the front,

Fig. 2 shows a section along A - B through the inventive security paper according to Fig. 1,

Fig. 3 shows a further embodiment of an inventive security paper from the front,

Fig. 4 shows a cross section along A - B through the inventive security paper according to Fig. 3.

Fig. 1 shows a detail of inventive security paper web 1 as is used for example for producing bank notes. Such security paper is usually made of cotton fibers or other annual plant fibers. For some applications, however, it may be useful to replace part of said natural fibers by plastic fibers, in particular polyamide fibers. Pure plastic fiber papers are also possible. During production of paper web 1 individual security elements are already embedded in the paper, such as a portrait watermark or security thread 2 shown in Fig. 1. Security thread 2 is quasi woven into the paper so as to pass directly to the surface of the paper in areas 3 while being embedded completely in paper pulp in the dash-lined areas. Thread 2 can be provided with any desired security features, such as an electroconductive, metallic layer, hologram or the like.

Fig. 2 shows a section through inventive security paper 1 along dash-dotted line A - B in Fig. 1. Inventive security paper 1 consists of raw paper 4 as usually leaves the paper machine, and inventive binder coating 5 which was knife-coated or printed all over a surface of security paper 1 according to the shown embodiment. Alternatively, coating 5 can also be applied to security paper 1 on both sides.

Figs. 3 and 4 show a further embodiment of inventive security paper 1. Fig. 4 shows a section through inventive security paper 1 along dash-dotted line A - B in Fig. 3.

As shown in Fig. 4, security paper 1 likewise consists of customary paper web 4 provided with a pure binder composition without fillers according to the invention. However, the binder layer is composed of different areas 6, 9. In areas 6 the binder composition is doped with an additive which is testable visually and/or ~~mechanically~~ by machine while remaining areas 9 of the binder composition contain no additive. As evident from Fig. 3, area 6 represented by the doped binder composition forms visually readable information. Areas 7 likewise represented with the doped binder composition form coding 8 in the form of a bar code.

The additive may be for example a luminescent substance transparent in normal illumination but emitting in the visible spectral region and thus showing an intensive tone when irradiated with UV light. In this case information 6, 8, as shown in Fig. 3, is visible only in UV illumination.

However, one can also provide a plurality of additives which are singly detectable. The mixture ratio of the additives can be used to produce an additional coding. It is likewise conceivable to produce information 6, 8 with different additives. Thus, one can produce information 6 with the aid of a luminescent substance emitting in the visible spectral region, as explained above, while representing bar code 8 with the aid of a substance detectable solely by machine, e.g. a luminescent substance emitting in the IR spectral region. Marks 6 visible to the naked eye in UV illumination can represent for example a picture, pattern or readable information. Machine-readable code 8, however, could represent certain information characteristic of the individual document of value, optionally in encrypted form. Said information could be properties inherent to the paper material, such as transmission properties, thickness distribution, etc., or other information essential to the particular document of value, such as denomination or the like.

Amended patent claims

1. A security paper for producing documents of value, such as bank notes, passports, ID cards or the like, which is provided at least partly with a coating ensuring longer fitness for circulation, characterized in that the coating is provided at least on one of the surfaces of the security paper and the coating consists of a composition containing only a binder and no fillers or polyurethane.

2. A security paper according to claim 1, characterized in that the composition is present on the security paper in a coating weight of 1 to 6 g/m², preferably 2 to 3 g/m².

3. A security paper according to claim 1 or 2, characterized in that the composition contains acrylates or a mixture of polymers or copolymers with a high acrylate content as a binder.

4. A security paper according to at least one of claims 1 to 3, characterized in that the composition contains a low concentration of at least one substance with a visually and/or ~~mechanically~~ machine detectable property.

5. A security paper according to claim 4, characterized in that the substance has luminescent, magnetic, electroconductive, diffractive, light-interfering or light-polarizing properties.

6. A security paper according to claim 4 or 5, characterized in that the substance or substances are provided in the coating only partly, preferably in the form of a pattern.

7. A security paper according to at least one of claims 1 to 6, characterized in that the security paper consists of fibers of annual plants, in particular cotton fibers.

8. A security paper according to at least one of claims 1 to 7, characterized in that the security paper consists at least partly of plastic fibers, preferably polyamide fibers.

9. A security paper according to at least one of claims 1 to 8, characterized in that the security paper is an unsized paper.

10. A security paper according to at least one of claims 1 to 9, characterized in that the coating is applied to the security paper only in certain areas and the coating-free areas are printed with an ink containing special-effect pigments.

11. A document of value, such as a bank note, check, ID card or the like, characterized in that the document of value has a security paper according to at least one of claims 1 to 10.

12. A document of value, such as a bank note, check, ID card or the like, characterized in that the document of value has a security paper provided at least partly with a coating ensuring longer fitness for circulation, the coating being provided at least on one of the surfaces of the security paper, and the coating consists of a composition containing only a binder and no fillers, the security paper having over the coating a print which is in turn covered by a coating, e.g. a lacquer layer.

13. A method for producing a security paper according to at least one of claims 1 to 10, characterized in that a paper layer is produced in a paper machine and subsequently a coating applied at least partly to at least one of the surfaces of the paper, the coating consisting of a composition containing only a binder and no fillers or polyurethane.

14. A method according to claim 13, characterized in that the paper is sized before application of the coating.

15. A method according to claim 13 or 14, characterized in that the coating is printed on.

16. A method according to at least one of claims 13 to 15, characterized in that the coating is applied in a plurality of steps.

17. A method according to claim 16, characterized in that a composition containing small amounts of at least one substance with at least one visually and/or ~~mechanically~~ machine detectable physical property is applied in the form of a pattern in a first step, and the remaining part of the surface of the paper is provided with the same composition without the detectable substance in register with the pattern in a second step.

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Internationales Büro

PCT

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Veröffentlicht
Mit internationalem Recherchenbericht.

(54) Title: ANTIFALSIFICATION PAPER

(54) Bezeichnung: SICHERHEITSPAPIER

(57) Abstract

The invention relates to an antifalsification paper for producing valuable documents such as banknotes, passports, identity cards or similar. At least part of the inventive paper is provided with a coating which guarantees a longer period of circulation. Said coating is provided on at least one surface of the antifalsification paper and consists of a composition containing only one binder and no fillers.

(57) Zusammenfassung

Die Erfindung betrifft ein Sicherheitspapier zur Herstellung von Wertdokumenten, wie Banknoten, Pässen, Ausweiskarten oder dergleichen, das zumindest teilweise mit einer Beschichtung versehen ist, die eine erhöhte Umlauffähigkeit gewährleistet. Die Beschichtung ist wenigstens auf einer der Oberflächen des Sicherheitspapiers vorgesehen und besteht aus einer Zusammensetzung, die lediglich ein Bindemittel und keine Füllstoffe enthält.

Abstract

The invention relates to a security paper for producing documents of value, such as bank notes, passports, ID cards or the like, which is provided at least partly with a coating ensuring longer fitness for circulation. The coating is provided at least on one of the surfaces of the security paper and consists of a composition containing only a binder and no fillers.

FIG.1

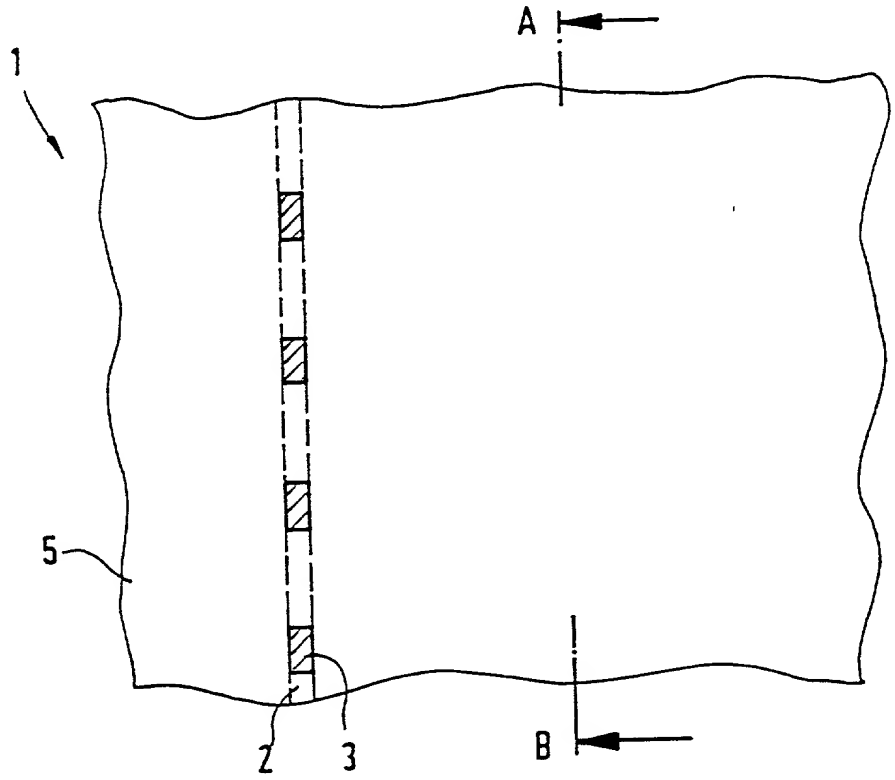


FIG.2

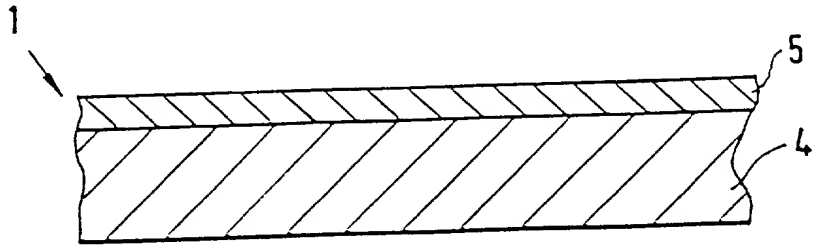


FIG.3

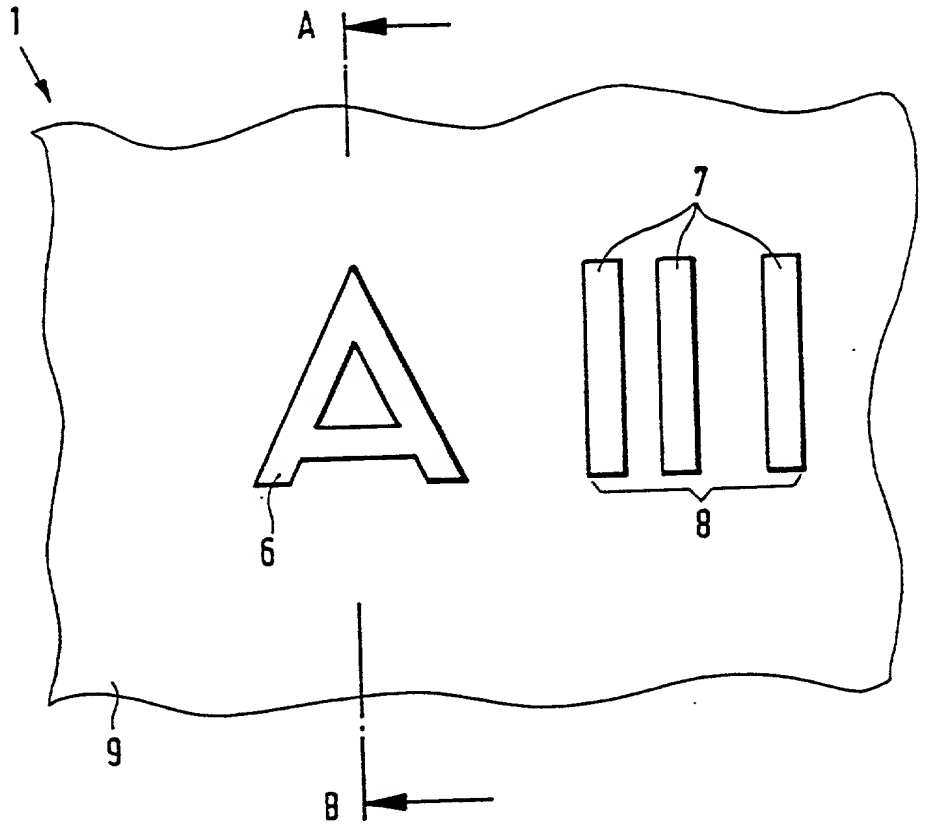
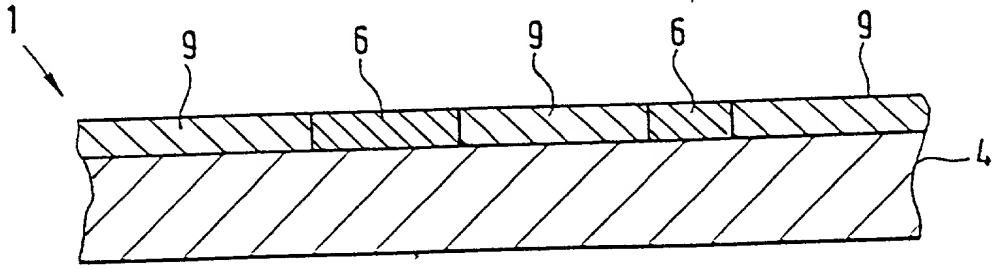


FIG.4



ATTORNEY/DOCKET #: JEK/Plaschka

5104561US

DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name; I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention (Design, if applicable) entitled.
ANTIFALSIFICATION PAPER

the specification of which (check one):

☐ is attached hereto, or ☒ was filed on: **28 June 1999** as U.S. Application Number or PCT International Application Number:
(PCT/EP99/04471) 09/719,559
and (if applicable) was amended on:

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in *Title 37, Code of Federal Regulations, §1.56*. I hereby claim foreign priority benefits under *Title 35, United States Code §119* of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

PRIOR FOREIGN APPLICATION(S)			PRIORITY CLAIMED	
Number	Country	Day/Month/Year Filed	Yes	No
198 29 004.7	Germany	29 June 1998	X	

☐ Additional Priority Application(s) Listed on Following Page(s)

☐ I HEREBY CLAIM THE BENEFIT UNDER TITLE 35 U.S. CODE §119(E) OF ANY U.S. PROVISIONAL APPLICATIONS LISTED BELOW.	
Application Number	Day/Month/Year Filed

☐ Additional Provisional Application(s) Listed on Following Page(s)

I hereby claim the benefit under *Title 35, United States Code, §120* of any United States application(s) or PCT international application(s) designating The United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of *Title 35, United States Code, §112*, I acknowledge the duty to disclose information which is material to patentability as defined in *Title 37, Code of Federal Regulations, §1.56* which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

Application Number	Filing Date	Status - Patented, Pending or Abandoned

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under *section 1001 of title 18 of the United States Code* and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

6

POWER OF ATTORNEY: I (We) hereby appoint as my (our) attorneys, with full powers of substitution and revocation, to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: J. Ernest Kenney, Reg. No. 19,179, Eugene Mar, Reg. No. 25,893; Richard E. Fichter, Reg. No. 26,382; Thomas J. Moore, Reg. No. 28,974; Joseph DeBenedictis, Reg. No. 28,502; Benjamin E. Urcia, Reg. No. 33,805; and

I(we) authorize my(our) attorneys to accept and follow instructions from **Klunker Schmitt-Nilson Hirsch** regarding any matter related to the preparation, examination, grant and maintenance of this application, any continuation, continuation-in-part or divisional based thereon, and any patent resulting therefrom, until I(we) or my(our) assigns withdraw this authorization in writing.

Send correspondence to: **BACON & THOMAS, PLLC**
625 Slaters Lane - 4th Floor
Alexandria, VA 22314-1176

Telephone Calls to: **J. Ernest Kenney (703) 683-0500**

FULL NAME OF FIRST OR SOLE INVENTOR	CITIZENSHIP
Reinhard PLASCHKA	**Germany**
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DATE 01/22/01	SIGNATURE Reinhard Plaschka

☒ *See following page(s) for additional joint inventors.*

510456/US

ATTORNEY/DOCKET NO: **JEK/Plaschka**

CONTINUATION OF DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

Page 2

PRIOR FOREIGN APPLICATION(S) (35 USC §119)			PRIORITY CLAIMED	
Number	**Country**	**Day/Month/Year Filed**	**Yes**	**No**

PRIOR PROVISIONAL APPLICATIONS 35 U.S. CODE §119(E)	
Application Number	**Day/Month/Year Filed**

PRIOR U.S. OR PCT INTERNATIONAL APPLICATIONS (35 U.S. CODE §120)		
Application Number	**Filing Date**	**Status - Patented, Pending or Abandoned**

2

FULL NAME OF JOINT INVENTOR **Theo BURCHARD**	CITIZENSHIP **Germany**
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DATE 01.18.01	SIGNATURE

FULL NAME OF JOINT INVENTOR	CITIZENSHIP
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☐ *See following pages for additional joint inventors/priority applications.*

ATTORNEY/DOCKET NO **JEK/Plaschka**

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ANTIFALSIFICATION PAPER

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PCT/EP99/04471

and (if applicable) was amended on:

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PRIOR FOREIGN APPLICATION(S)			PRIORITY CLAIMED	
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I HEREBY CLAIM THE BENEFIT UNDER TITLE 35 U.S. CODE §119(E) OF ANY U.S. PROVISIONAL APPLICATIONS LISTED BELOW.	
Application Number	Day/Month/Year Filed

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☒ *See following page(s) for additional joint inventors.*

ATTORNEY/DOCKET NO: **JEK/Plaschka**

CONTINUATION OF DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

Page 2

PRIOR FOREIGN APPLICATION(S) (35 USC §119)			PRIORITY CLAIMED	
Number	**Country**	**Day/Month/Year Filed**	**Yes**	**No**

PRIOR PROVISIONAL APPLICATIONS 35 U.S. CODE §119(E)	
Application Number	**Day/Month/Year Filed**

PRIOR U.S. OR PCT INTERNATIONAL APPLICATIONS (35 U.S. CODE §120)		
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FULL NAME OF JOINT INVENTOR **Theo BURCHARD**	CITIZENSHIP **Germany**
RESIDENCE ADDRESS Buchleiten 1, D-83703 Gmund, Germany	POST OFFICE ADDRESS IS THE SAME AS RESIDENCE ADDRESS UNLESS OTHERWISE SHOWN BELOW
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